

REMARKS

Claims 1-12 are currently pending in this application. Claim 1 is independent. Claims 6, 7 and 9 are currently amended to correct their form.

Rejection Under 35 U.S.C. § 112, first paragraph

Claims 1-12 are rejected under 35 U.S.C. §112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to make or use the invention. In particular, the Office Action expresses uncertainty as to "how the changing of the speed of the roller and film causes the demetallization to change relative to the pre-printed image (i.e., in register) since the location of the demetallization pattern is fixed relative to the pre-printed web". The rejection is respectfully traversed as follows.

In the printing field, it is known to index various rollers relative to a moving web. In this regards, paragraph [0022] of the specification sets forth that "(t)he speed at which the web 40 travels is determined by the registration information conveyed by the registration sensor 4 to the demetallization station 5 and is controlled by a servo motor 11 attached to the demetallization station". Paragraph [0022] further provides that "(t)he application of the registration information is determined by a simple computer software program which causes the servo motor 11 to spin faster or slower depending upon the registration information".

As set forth above, the Office Action expresses uncertainty as to "how the changing of the speed of the roller and film causes the demetallization to change relative to the pre-printed image (i.e., in register) *since the location of the demetallization pattern is fixed relative to the pre-printed web*" (*emphasis added*). However, the present invention does not disclose that the demetallization pattern is fixed relative to the pre-printed web 40. As would be appreciated by one of ordinary skill in the art of printing systems, by adjusting the speed of the demetallization roller 9, the demetallization roller 9 is displaced either slightly forward or backward with respect to the pre-printed web 40. In this manner, the speed of the demetallization roller 9 is adjusted in order to properly index the demetallization roller 9 with respect to the pre-printed web 40. When the demetallization roller 9 changes speeds for adjusting purposes, it allows the pre-printed web 40 to slip by a predetermined amount in either direction in order to achieve proper registration.

Such indexing adjustments made by adjusting the speed of one or more rollers are conventional and readily understandable by one of ordinary skill in the art of printing systems.

In view of the above, it is respectfully requested that the rejection of claim 1-12 under 35 U.S.C. §112, first paragraph be withdrawn.

Rejection Under 35 U.S.C. § 103(a)

Claims 1-12 are rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 4,959,120 to Wilson ("Wilson") in view of U.S. Patent No. 5,128,779 to Mallik ("Mallik") and further in view of U.S. Patent No. 4,745,288 to Hurley et al. ("Hurley").

The present invention is directed to a method for selective demetallization of a web material, comprising the steps of: (1) providing a web material having thereon an preplaced image and a registration mark and coated with a metal film; (2) conveying the web material to a demetallization station comprising a demetallization roll including indexing means for adjusting location of the demetallization roll; (3) prior to passage of the web material through the demetallization station, observing the registration mark with observation means and in response to such observation causing the indexing means to move the demetallization roll to align the demetallization roll to be in register with the web material; and (4) passing the web material through the demetallization station with the image in register with the demetallization roll; whereby predetermined portions of the metal film are removed or thinned to create or reveal visual elements of the web material in registration with the image. The preplaced image may be an ink printed image or an optical registered holographic image instead of a holographic wallpaper (continuous) pattern.

Wilson discloses a selectively demetallized metal film in which the metal film has different amounts of metal removed in different areas to provide a film having a graduated optical density from one area to another. The amount of metal present in the film can vary gradually and continuously or in stages resulting in a series of bands or patches. The product is produced by providing a substrate such as plastic film having a thin semiconductive metal film coated thereon. Different amounts of the metal are removed from the film in different areas, preferably by exposing the metal film in different areas to different amounts of an etchant which

can be provided in the form of minute droplets of one size in one area and of a different size in a different area.

Wilson relates to demetallizing metallized film or paper webs with a continuous demetallizing pattern. However, Wilson does not involve demetallizing in register to a pre-printed image on a web, nor does it involve the use of holographic materials. In this regard, the Office Action correctly indicates that Wilson does not show the use of a web having a pre-printed image. Additionally, Wilson fails to disclose providing a web material having thereon a preplaced image *and a registration mark* and coated with a metal film (*emphasis added*). Moreover, Wilson does not teach *observing the registration mark* with observation means and in response to such observation *causing the indexing means to move the demetallization roll to align the demetallization roll to be in register with the web material* (*emphasis added*). The Office Action applies Mallik to cure the numerous deficiencies of Wilson.

Mallik teaches non-continuous reflective holograms or diffraction gratings for authenticating documents, and for decorative and product packaging applications. In contrast to the principles of Applicant's invention, Mallik pertains to a pair of substrates, wherein a first substrate is a holographic web that has a wallpaper holographic pattern embossed onto it rather than a registered holographic image. The second substrate contains pre-printed (with ink) information that will be viewable through the holographic substrate after it has been partially metallized and once it has been attached to the other using some type of adhesive and laminating procedure. Mallik does not involve holographic registered images and registering these images in register to the pre-printed images on the other substrate. Instead, Mallik employs a wallpaper holographic repetitive design with repetitive metallic areas such as dots or circles. The metallic repetitive areas do not register in relation to the holography because both the holography and the metallic areas are wallpaper patterns.

Mallik fails to cure the numerous deficiencies of Wilson. Specifically, Mallik fails to teach: (1) providing a web material having thereon a preplaced image *and a registration mark* and coated with a metal film (*emphasis added*); and (2) *observing the registration mark* with observation means and in response to such observation *causing the indexing means to move the demetallization roll to align the demetallization roll to be in register with the web material*

(*emphasis added*). Additionally, Wilson and Mallik are not properly combinable as suggested by the Examiner. In particular, by combining the teachings of Mallik with those of Wilson, the functionality of the resultant system would be destroyed. Specifically, Wilson is directed to the use of a single substrate, whereas Mallik pertains to a pair of substrates (wherein a first substrate is a holographic web and the second substrate contains pre-printed ink that will be viewable through the holographic substrate). Wilson and Mallik may not be properly combined as suggested by the Examiner. The Office Action applies Hurley to cure the deficiencies of Wilson and Mallik.

Hurley discloses a registration controller for sensing the presence and location of registration marks on a web as the web passes a scanner, and for generating a signal for use in controlling downstream operations such as cutting and/or printing operations. Although Hurley relates to sensing registration marks, it has nothing to do with the adjustment of a demetallizing roller in order to match the pre-printing. In addition, Hurley does not disclose providing registration between the pre-printing and a demetallizing roller. Hurley clearly fails to disclose observing a registration mark with observation means, and in response to such observation, causing the indexing means to move the demetallization roll to align the demetallization roll to be in register with the web material, as required by independent claim 1.

In view of the above, it is respectfully submitted that claims 1-12 are not rendered obvious by Wilson in view of Mallik and further in view of Hurley.

Conclusion

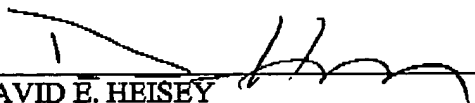
Applicant respectfully submits that claims 1-12 are currently in condition for allowance. The Commissioner is hereby authorized to charge any fee required or refund any overpayment to our Deposit Account No. 19-1853 in the name of Sheppard, Mullin, Richter & Hampton. Should any issues remain unresolved, the Examiner is invited to telephone the undersigned.

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Respectfully submitted,

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By


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